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AND INTERFERENCES

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95-3927
Schwedler
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed 25 July 1994.

(1) Status of claims.

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

This appeal involves claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78, and 80-82.

Claims 1-17, 19-20, 22-25, 27-32, 34, 37-40, 42-67, 72 and 79 have been cancelled.

(2) Status of Amendments After Final.

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect. Both of the amendments after final rejection filed on 25 March 1994 and 25 July 1994 have been entered.

(3) Summary of invention.

The summary of invention contained in the brief is deficient because there was no delta-12 or delta-15 desaturase disclosure. Purified protein for delta-9 (i.e. stearoyl-ACP) desaturase is found at pages 40-46. The protein was sequenced and probes were used to obtain clones containing a complete safflower (Carthamus tinctorius) cDNA at Figure 2, SEQ ID NO:2 (see e.g., page 49). Safflower cDNA was used to obtain a complete rapeseed (Brassica campestris) cDNA at Figure 4C and SEQ ID NO:19. Brassica cDNA was used to obtain a complete castor bean (Ricinus communis) cDNA

at Figure 3B and SEQ ID NO:15 and a partial jojoba (Simmondsia chinensis) cDNA at Figure 5 and SEQ ID NO:43. Hybidization with safflower cDNA detected bands in rapeseed only upon prolonged exposure but did not detect bands in Cuphea hookeriana or Brassica napus (pages 93-94). Hybidization with castor bean cDNA detected bands in corn and California bay but not in tobacco (which is also an oil seed) or petunia or tomato (pages 96-97). It was also determined that delta-9 desaturase was a multigene family in Brassica (page 100, lines 23-26).

When safflower delta-9 desaturase was expressed in E. coli, the disclosure says that the protein would not function unless spinach ferrodoxin was present (pages 82-86). When safflower delta-9 desaturase was expressed in rapeseed, no change in fatty acid composition was observed although some individual mature seeds were said to have a lower stearate content (page 86).

When rapeseed delta-9 desaturase was expressed in rapeseed in an antisense orientation in a construct that contained two copies of the antisense desaturase -- one controlled by a napin promoter and the other controlled by an ACP-promoter -- (page 106, line 20 to 107, line 2), one transformant produced segregated seed in the second generation that had higher levels of stearate (18:0) and lower levels of oleate (18:1) than the control (page 111, lines 7-16). The specification appears to also say that another seed which had a low germination rate had even higher level of stearate but no reported change in oleate

(page 111, lines 17-24). When this same dual antisense construct was introduced into Brassica napus, seeds were also said to have higher stearate and lower oleate levels (page 111, line 25 to page 112, line 3) and the segregating seeds were said to have continuously variable oil content levels. Thus no altered level of expression and oil content was stably established in a transgenic line of progeny plants. In fact, the specification says that oil content (including the stearate content) of mature seeds of the transgenic T2 segregated was essentially unchanged (page 113, lines 6-9).

The specification also points out that expressing rapeseed delta-9 desaturase constitutively (behind a 35S promoter constructed at page 110, lines 1-10) in either rapeseed or Brassica napus interfers with plant growth creating unspecified abnormalities. In view of all of the above methods of use, the specification does nothing more than suggest that some as yet undetermined alteration in fatty acid content may be obtained someday by an as yet unestablished means.

(4) Issues.

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows:

I. Whether claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78 and 80-82 were properly rejected under 35 U.S.C. 112, first and second paragraphs.

II. Whether the specification was properly objected to under 35 USC 112, first paragraph, for inadequate written description and lack of enablement and thus whether claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78 and 80-82 were properly rejected

under 35 U.S.C. 112, first paragraph, for the reasons set forth in the objection to the specification.

III. Whether claims 18, 21, 26, 33, 35-36, 41, 68-69, 71, 73-74, 76-77 and 80-81 were properly rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to processes of modifying oil composition of Brassica by transformation with antisense oriented Δ9 stearoyl-ACP cDNA from Brassica.

IV. Whether claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78, and 80-82 were properly rejected under 35 U.S.C. 103 as being unpatentable over Kridl et al (6) taken with Knauf (12) and Shewmaker et al ('065) and further in view of McKeon et al (16) and Weissman et al (3).

(5) Grouping of claims.

The rejected claims appear to stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and separate arguments are not found. See 37 C.F.R. 1.192(c)(5).

(6) Claims appealed.

The copy of the appealed claims contained in the Appendix to the brief is correct.

(7) Prior Art of record.

EP 0,255,378	Kridl et al	3 February 1988
US 5,107,065	Shewmaker et al	issued 21 April 1992 filed 30 August 1988
US 4,394,443	Weissman et al	issued 19 July 1983
McKeon et al	Journal of Biol. Chem. Volume 257, pages 12141-12147	1982
Knauf	Trends in Biotechnology Volume 5, pages 40-47	1987

(8) New prior art.

No new prior art has been applied in this examiner's answer.

(9) Grounds of rejection.

The following ground(s) of rejection are applicable to the appealed claims.

Claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78 and 80-82 on appeal (claims 22, 72 and 79 now cancelled) remain rejected under 35 U.S.C. 112, first and second paragraphs, as the claimed invention is not described in such full, clear, concise and exact terms as to enable any person skilled in the art to make and use the same, and/or for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The content of the constructs used in the disclosed process at pages 110-114 is unclear because the written description is difficult to follow and there are no drawings of the constructs. For example, pCGN3242 (discussed at pages 106-107) either has two copies of antisense desaturase (of undetermined length and composition) under the control of two different promoters--or one copy controlled by an inserted napin promoter and it is unclear what happened to the "ACP" promoter. The pCGN3234 construct is less confusing only in the sense that at least one antisense oriented desaturase cDNA (undetermine origin and length) is under the control of a CaMV35S promoter (page 110); however, the disclosure teaches that this does not work well and is clearly not the preferred best mode. For these reasons, the Examiner cannot determine what is necessary to acheive the stated end result. The claims are incomplete for failing to recite elements necessary to acheive the stated end result such as some type of antisense orientation for desaturase cDNA; but it is not clear what portion(s) must be in the antisense orientation or what other elements must be included in the claimed process in order to acheive the stated result based on the disclosure as filed.

The specification remains objected to under 35 U.S.C. 112, first paragraph as failing to provide a full written description and enablement for practicing the claimed invention.

The process of modifying oil composition of Brassica by transformation with antisense oriented stearoyl-ACP (a.k.a. Δ9) desaturase cDNA from Brassica under the control of seed-specific promoters (pages 110-113) does not apparently produce all sorts of modifications but rather only appears to increase stearic acid in some but not all progeny and apparently in a continuously variable range of from 22.9% up to 45% in the two Brassica species tested. The composition of the construct used, pCGN3242, (see pages 106-107) is unclear as noted in the above rejection; and it is unclear whether other plasmids could be constructed which would function similarly. The process clearly requires choice of the proper construct for success (e.g., choice of promoter) but those features which are peculiar to this plasmid or which are general features that could be constructed in any plasmid are unclear. Thus the disclosure lacks an adequate written description to enable one of skill in the art to practice the invention without undue experimentation.

Claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78 and 80-82 on appeal (claims 22, 72 and 79 now cancelled) remain rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth in the objection to the specification.

Claims 18, 21, 26, 33, 35-36, 41, 68-69, 71, 73-74, 76-77 and 80-81 on appeal (claims 22, 72 and 79 now cancelled) remain rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to a process of modifying oil composition of Brassica by transformation with antisense oriented stearoyl-ACP (a.k.a. Δ9) desaturase cDNA from Brassica under the control of seed-specific promoters as described at pages 110-114.

The process does not apparently produce all sorts of modifications but rather only appears to increase stearic acid in some but not all progeny and apparently in a continuously variable range of from 22.9% up to 45% in the two Brassica species tested. See M.P.E.P. 706.03(n) and 706.03(z). No other alteration appears to be reproducible, for example, it is not clear what if anything happens to the oleic acid (a.k.a. 18:1) fraction which may decrease by about half in some cases

(page 110) and remain unchanged in others (top of page 112, it is both decreased and increased). Limitation to specific examples actually disclosed is warranted where unique and unpredictable biochemical and genetic actions are involved. The scope of the claimed invention is not commensurate with the disclosure as filed. See In re Marzocchi, 169 USPQ 367; In re Angstadt and Griffin, 190 USPQ 214; Ex parte Hitzeman, 9 USPQ2d 1821.

Claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78, and 80-82 on appeal (claims 22, 72 and 79 now cancelled) remain rejected under 35 U.S.C. 103 as being unpatentable over Kridl et al (6) taken with Knauf (12) and Shewmaker et al ('065) and further in view of McKeon et al (16) and Weissman et al (3) as applied in the last office action and repeated herein.

The primary reference disclosed all features of the claimed invention including seed specific expression during lipid accumulation by means of napin promoters but differed from the disclosed invention in that the expressed gene was a sense construct of acyl carrier protein rather than an antisense construct of stearoyl-ACP desaturase as in the present invention.

The secondary references disclosed that antisense constructs of fatty acid synthesis pathway genes were a desirable means of altering plant oil composition (Knauf). Shewmaker et al taught that a cDNA sequence was all one of ordinary skill in the art needed in order to make antisense constructs for any plant gene (Shewmaker et al). The tertiary references disclosed purified protein preparations of stearoyl-ACP desaturase from safflower and its role in fatty acid synthesis (McKeon et al) and taught that purified protein preparations were all that one of ordinary skill in the art needed in order to obtain cDNA for any gene (Weissman et al).

At the time this invention was made, it was obvious to one of ordinary skill in the art to modify the primary reference with the teachings of the secondary and tertiary references in order to obtain antisense constructs for any fatty acid pathway enzyme, including stearoyl-ACP desaturase, and down regulate expression of same in plants as suggested by Knauf with a reasonable expectation of success. Thus the invention as claimed was very clearly prima facie obvious as a whole over the prior art in the absence of clear and convincing evidence to the contrary.

(10) New ground of rejection.

This Examiner's Answer does not contain any new ground of

rejection.

(11) Response to argument.

I. Whether claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78 and 80-82 were properly rejected under 35 U.S.C. 112, first and second paragraphs.

The only method involving a "sense construct" described in this specification was a safflower delta-9 desaturase under the control of a napin promoter (specification, page 83, lines 1-6) expressed in rapeseed (specification, page 86). The disclosure says that there was "no significant change" in fatty acid composition (specification, page 86, lines 11-16). The very next paragraph, however, inexplicably says that some individual seeds had a lower stearate content (specification, page 86). It is not clear what plants must be transformed with what constructs to effect a significant change in fatty acid composition. It is also clear what steps are needed to obtain lower stearate levels from transgenic plants that are said to have no significant change in fatty acid composition. The results reported were contradictory at best.

There were two "antisense constructs" in the disclosure, both of these involved at least one copy of a rapeseed delta-9 desaturase but it is unclear which segment or what length was used in either construct.

The first antisense construct appears to have contained two copies of an antisense desaturase. One was controlled by a napin promoter and the other was controlled by an ACP-promoter -- (page

106, line 20 to 107, line 2). It is unclear whether both of these were from rapeseed, but at least one was a delta-9 desaturase from rapeseed. It is also possible that one of these antisense constructs was replaced by the other so that the first construct only contained one copy of the antisense oriented gene; the specification is unclear on this point.

The second antisense construct involved rapeseed delta-9 desaturase expressed under the control of a constitutive CaMV 35S promoter (page 110, lines 1-10); but when this construct was introduced into rapeseed and Brassica napus, abnormalities were observed. Thus this construct was said to interfer with plant growth -- it was not reported to alter the lipid content.

The first antisense construct was the only antisense construct in which lipid content of the transgenic progeny was measured and reported. One rapeseed transformant produced segregating seed in the second generation that had higher levels of stearate (18:0) and lower levels of oleate (18:1) than the control (page 111, lines 7-16). The specification also says that another seed which had a low germination rate had even higher levels of stearate but reported no change in oleate (page 111, lines 17-24). When the first antisense construct was introduced into Brassica napus, seeds were also said to have higher stearate and lower oleate levels (page 111, line 25 to page 112, line 3); however, this time the specification says that segregating B. napus seeds had continuously variable oil contents. No altered

fatty acid composition was stably established in a transgenic line of progeny plants. In fact, the oil content (including the stearate content) of mature seeds of transgenic T2 B. napus plants was essentially unchanged (page 113, lines 6-9).

It is unclear what method steps are needed to enable a person of skill in the art to make transgenic plants having an altered fatty acid composition. The only section of this application that states--without self-contradiction--that a change was obtained, was the first antisense construct when at least one copy of rapeseed delta-9 desaturase was introduced into rapeseed (page 111, lines 7-16) whether the germination rate was reduced or not. As noted above, the content of this construct and the segment of the desaturase gene used is unclear on the basis of the disclosure as filed. Thus the specification sheds little or no light on the issue of what construct and what method steps and what combination of delta-9 desaturase source and host plant are needed to achieve the stated end result.

Contrary to appellant's position (page 5, brief) prosecution was never restricted to antisense inhibition. Methods using sense and antisense were both considered in light of the specification as filed, but it is unclear what steps are needed to achieve the stated end result and the specification sheds no light on the issue.

II. Whether the specification was properly objected to under 35 USC 112, first paragraph, for inadequate written description and lack of enablement and thus whether claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78 and 80-82 were properly rejected

under 35 U.S.C. 112, first paragraph, for the reasons set forth in the objection to the specification.

Appellant's suggestion (pages 6-7, brief) to alter the lipid content of any plant by transformation with sense and antisense constructs that contain delta-9 desaturase from safflower or rapeseed, much less any desaturase from any plant, is tantamount to an invitation to experiment. Self-contradictory results with safflower delta-9 desaturase in the sense orientation controlled by a napin promoter and expressed in rapeseed included both "no significant change" in lipid content as well as reduced stearate in some individual seeds (specification, page 86). Expression of antisense rapeseed delta-9 desaturase controlled by CaMV-35S promoter was said to produce morphological abnormalities rather than an altered oil content (page 110).

Expression of antisense rapeseed delta-9 desaturase and (assuming there are two copies in the construct) at least one other antisense delta-9 desaturase under the control of a seed specific napin or ACP promoter yielded different results when introduced into rapeseed than when introduced into another Brassica species, B. napus. One rapeseed transformant produced segregating seed in the second generation that had higher levels of stearate (18:0) and lower levels of oleate (18:1) than the control (page 111, lines 7-16); while another seed which had a low germination rate had even higher levels of stearate but with reported no change in oleate (page 111, lines 17-24).

Expression of this same construct in Brassica napus produced

seeds said to have higher stearate and lower oleate levels (page 111, line 25 to page 112, line 3); however, the segregating B. napus seeds had continuously variable oil contents such that no altered fatty acid composition was stably established in the transgenic plants. In fact, the oil content (including stearate content) of mature seeds of transgenic T2 B. napus plants was said to be essentially unchanged (page 113, lines 6-9).

Thus, there is no guidance for which combinations of delta-9 desaturase source and host plant to use and no adequate written description of the constructs that were used. One of skill in the art could not determine what constructs to use in what plants to achieve the stated end result.

Appellant contends that the results obtained in the working examples can be reproduced with any antisense constructs using any portion of a gene sequence of any length (pages 8-9, brief). The portions used by applicant are unclear on the basis of the disclosure as filed and the results obtained with a rapeseed host were not consistent with those obtained with B. napus as a host. The antisense portion must be able to anneal to complementary mRNA in the host plant without interference from secondary structure (see also Shewmaker et al '065, page 2, lines 51-58). Furthermore, while antisense rapeseed delta-9 desaturase would complement any portion of the natural endogenous sense transcript in a rapeseed, this would not be the case in other plants. The specification lacks guidance that would indicate which portion of

the antisense gene to use and how long it must be to effectively block expression in hetereologous host plants. Promoter strength is also critical to success as sufficient quantities of the antisense transcript in relation to the endogenous sense gene transcripts must be produced in order to effectively inhibit the expression in vivo (Shewmaker et al '065, page 3, lines 40-44). Thus one of skill in the art would need to know which portion of the sequence to use for any given combination of construct and host. This specification provides no guidance for determining what segments to use and is unclear as to what the exemplified constructs consisted of in terms of the antisense sequence as well as the copy number of same. One of skill in the art could not know how to obtain antisense constructs that would alter the oil content without undue experimentation.

III. Whether claims 18, 21, 26, 33, 35-36, 41, 68-69, 71, 73-74, 76-77 and 80-81 were properly rejected under 35 U.S.C. 112, first paragraph, as the disclosure is enabling only for claims limited to processes of modifying oil composition of Brassica by transformation with antisense oriented Δ9 stearoyl-ACP cDNA from Brassica.

These claims are not limited to any particular sequence set forth in a SEQ ID NO: identifier. The claims are to methods of making any alteration in oil content by transforming any plant with any desaturase of any kind obtained from any plant source. In some claims, the desaturase is in a sense orientation while in others it is in an antisense orientation. Certain claims specify that the desaturase be a delta-9 desaturase (i.e. stearoly-ACP desaturase) and some claims specify that the delta-9 desaturase

should be obtained from Brassica (which includes all species and such things as cabbage, broccoli, kohlrabi, and brussel sprouts as well as rapeseed). None of these claims specify the rapeseed delta-9 desaturase multigene family or the member of that family that was sequenced and presented in Figure 4C and SEQ ID NO:19.

Contradictory results of "no significant change" and decreased stearate with the sense safflower delta-9 construct in a rapeseed plant (specification, page 86) are not sufficient to enable one of skill in the art to alter lipid levels in any plant with any desaturase much less any delta-9 desaturase on the basis of this disclosure as filed.

Lack of success and contradictory results with antisense rapeseed delta-9 desaturase constructs (pages 111-113) are not sufficient to enable one of skill in the art to alter lipid levels in any plant with any antisense oriented desaturase much less any antisense delta-9 desaturase on the basis of this disclosure as filed.

Even if cDNAs for safflower and rapeseed and castor been and jojoba had been used to successfully alter lipid levels these disclosed sequences were only for delta-9 desaturase genes. Thus the specification is not sufficient to enable one of skill in the art to alter lipid levels in any plant with any desaturase (such as delta-12 or delta-15 desaturase) on the basis of this disclosure as filed. Furthermore, the isolation techniques referred to at page 11 of the brief could not lead to all delta-9

desaturases from all plants as hybridization bands were not detected when DNA of Cuphea hookeriana or tobacco or petunia or tomato or Brassica napus were probed with the disclosed cDNAs of safflower or castor bean delta-9 desaturase (pages 93-94 and 96-97).

Brassica embraces many species and just one of those species includes plants as diverse as cabbage and broccoli; thus Brassica cells are not a narrow limitation but rather a very broad limitation that is not commensurate with the disclosure as filed. Moreover, any oilseed or other plant has a particular fatty acid composition that results from the fatty acid biosynthesis pathway endogenous to that plant. Thus the background of any host plant differs such that any effect one of skill in the art could hope to have would necessarily vary with the biosynthesis pathway characteristics of the host plant and the interaction of same with any given construct. The possibilities are endless and the suggestion to do so is tantamount to an invitation to experiment.

The claims are clearly not commensurate with the disclosure and attempt to embrace an entire field of endeavor that requires undue experimentation to achieve success. Whatever efficacy may have been achieved with one of the rapeseed antisense constructs in a rapeseed host is not sufficient to warrant extension to efficacy of that construct in any other plant. It is not clear what the construct contained in terms of sequence or whether that sequence complements endogenous sequences in other species so as

to have any potential for inhibition. Hoped for results for other types of desaturases active at other points in the biosynthesis pathway which are not described in the specification are not commensurate with the disclosure as filed. One of skill in the art cannot known what expression parameters to vary and these embodiments provide no guidance or general teaching sufficient to warrant claims which embrace any and all plant desaturases.

IV. Whether claims 18, 21, 26, 33, 35-36, 41, 68-71, 73-78, and 80-82 were properly rejected under 35 U.S.C. 103 as being unpatentable over Kridl et al (6) taken with Knauf (12) and Shewmaker et al ('065) and further in view of McKeon et al (16) and Weissman et al (3).

Appellant believes (Brief, pages 15-19) that McKeon et al is deficient because the protein is not pure -- specifically, that a low molecular weight albumin was present in the material applied to the polyacrylamide gel which must have run off with the gel front and thus could not be seen in Figure 2 of McKeon et al. As evidence therefore, Appellant offers the Thompson Declaration and has attempted to draw inferences from an untranslated Netherlands application compared with a publication by Kater et al. The Netherlands application was not very useful without a translation; however, Figure 1 in that application does appear involve the same sequence as that of Figure 3 in Kater et al. Purification of enoyl ACP reductase from Brassica does not appear to have anything to do with the purity of the desaturase prepared from safflower by McKeon et al. Kater et al repeatedly said that

the McKeon et al procedure purifies desaturase from safflower but that the same procedure applied to brassica copurifies desaturase and reductase.

The Thompson Declaration, on the other hand, shows what appears to be contamination by albumin in the safflower protein preparation made by Appellant using the McKeon et al protocol in that the HPLC trace shows an albumin peak that approximates 20% of the volume of the desaturase peak. The albumin was said to be undetected by McKeon et al because it runs with the dye front (Thompson Declaration, 0), but the gel profile shown by McKeon et al does not show a contaminant at the dye front (page 12143, Figure 2). Appellant is not deemed to be motivated to find homogeneity or near homogeneity or to successfully obtain peptide sequences with the McKeon et al preparation.

Assuming arguendo that albumin was present at or before the dye front in the McKeon et al preparation, the preparation would still be pure enough for peptide sequencing as Appellant does not contend that the protein band (McKeon et al, Figure 2) is contaminated. Since the preparation is said to be homogeneous and the purity of the SDS-polyacrylamide gel desaturase protein band is not disputed, the issue would appear to be whether it was a matter of further purification to obtain a peptide sequence from the gel band of Figure 2 as opposed to the ACP-column eluate which was applied to the gel.

The Examiner has looked at the protein sequencing art to determine whether one of ordinary skill in the art would have determined the peptide sequence as a matter of routine from the gel band or the column eluate. Elution of protein from polyacrylamide gels prior to peptide sequencing appears to have been routine in the art; for example, Kater et al transferred protein from an SDS-polyacrylamide gel to a PVDF membrane following procedures recommended by the maker of the automated protein sequence analyzer (page 897, column 2). Thus the protein in the gel band of McKeon et al appears to have been the material which one of ordinary skill in the art would have used as a matter of routine for determining the peptide sequence.

Footnote 5 (page 19, Brief) correctly notes that there can be no double patenting over inventions that were restricted and in which the restriction has never been withdrawn. No double patenting rejection has been made.

Contrary to Appellant's position (Brief, pages 19-21) In re Bell does not stand for the premise that a DNA sequence is always unobvious over its corresponding protein. In fact, the Court states at page 1531 that "This is not to say that a gene is never rendered obvious when the amino acid sequence of its coded protein is known". The Court in Bell says that one can use the genetic code to determine the structure for the corresponding gene and that one has the potential to obtain the gene. Unlike Bell, which involved a particular DNA sequence encoding a

particular amino acid sequence, these claims do not specify any particular Δ9 desaturase encoding sequence of any particular length. These claims are broader than the claims in Bell; as any such sequence for any member of a multigene family obtained from safflower, castor bean, or rapeseed or any other plant will be embraced by these claims. These claims do not require any particular amino acid sequence. The DNA must merely encode a Δ9 desaturase protein. The Examiner contends that Ex parte Hudson, 18 USPQ2d 1322 (BPAI 1990) is more on point here in that the claims embrace any portion of any sequence encoding the protein from any plant or from any Brassica plant. Furthermore, Kridl et al (page 2, lines 55-65) and Knauf (page 4, column 3) each acknowledge that DNA sequences were routinely obtained with probes derived from amino acid sequences of purified proteins.

The expectation of success (Brief, pages 21-24) set forth by the prior art is equivalent to the expectation of success set forth in this disclosure as filed. The claims invoke no specific steps or require any specific result other than an altered lipid content. The idea to introduce lipid biosynthesis pathway genes to alter the lipid composition was old in the art and one of ordinary skill in the art would have had the same reasonable expectation of success as that which appellant hopes for using the same methods proposed by appellant in the application as filed. The Examiner's position is not "obvious to try" because the stated end result in these claims is merely an unspecified

alteration which the prior art fully expected to obtain by genetic engineering means.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

P. Moody

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P. Moody
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